AMENDMENTS TO THE CLAIMS

Claims 1-14 (cancelled)

Claim 15 (currently amended): A modified functional *Sorangium cellulosm* epothilone PKS wherein said modification comprises at least one of:

replacement of at least one acyltransferase (AT) domain with an AT domain of different specificity in module 7 and/or module 8;

inactivation of a ketoreductase (KR) domain in module 7;

inactivation of a methyltransferase (MT) domain in module 8; and

addition of at least one of KR, dehydrogenase (DH) and enoylreductase (ER) activity in at least one β-carbonyl modification domain in module 7 and/or module 8;

wherein the modified PKS is contained in a non-*S. cellulosum* cell or contained in a cell-free system, and wherein the modified PKS produces an epothilone D derivative with a double bond between C-12 and C-13.

Claim 16 (previously presented): The modified PKS of claim 15 wherein said cell or system contains additional enzymes for modification of said epothilone D derivative.

Claim 17 (previously presented): The modified PKS of claim 16 wherein said additional enzymes comprise an oxidase.

Claims 18-24 (cancelled)

Claim 25 (previously presented): A PKS enzyme comprising all of a non-epothilone PKS and a methyltransferase (MT) domain of module 8 of the epothilone PKS.

Claims 26-28 (cancelled)

Claim 29 (currently amended): A modified functional epothilone PKS contained in a non-*S. cellulosum* host cell, said PKS comprising (a) the proteins encoded by the *Sorangium cellulosum epoA*, *epoB*, *epoC*, *epoD*, and *epoF* genes and (b) a modified functional EpoE protein that lacks at least one activity encoded by a Sorangium cellulosum *epoE* gene and/or comprises at least one domain derived from a heterologous polyketide synthase (PKS), wherein the PKS produces an epothilone D derivative with a double bond between C-12 and C-13 when expressed in the cell.

Claim 30 (previously presented): The modified functional epothilone PKS of claim 29 wherein module 7 comprises an acyl transferase (AT) domain having malonyl, ethylmalonyl, or 2-hydroxymalonyl specificity and/or module 8 comprises an AT having malonyl, ethylmalonyl, or 2-hydroxymalonyl specificity.

Claim 31 (previously presented): The modified functional epothilone PKS of claim 29 that lacks a methyl transferase (MT) activity of module 8.

Claim 32 (previously presented): The modified functional epothilone PKS of claim 29 contained in a cell or contained in a cell-free system.

Claim 33 (previously presented): The modified functional EpoE protein of claim 15, wherein said cell or cell-free system comprises a functional PKS.

Claim 34 (previously presented): The modified functional EpoE protein of claim 15, wherein the functional PKS comprises proteins encoded by EpoA, EpoB, EpoC, EpoD and EpoF genes.